Proposed claims for Interview. Do Not Enter. /LS/

Stelling, Lucas

From: Smith, Duane
Sent: Wednesday, October 27, 2010 11:37 AM
To: Stelling, Lucas
Subject: FW: DISCUSSION VERSION OF CLAIM
Attachments: 2010-10-27 proposed claims for examiner interview.doc

From: Nuell, Mark J. [mailto:DRN@bskb.com]
Sent: Wednesday, October 27, 2010 11:35 AM
To: Smith, Duane
Cc: pchopra
Subject: DISCUSSION VERSION OF CLAIMS

FOR DISCUSSION PURPOSES ONLY – NOT FOR ENTRY INTO FILE

Dear Mr. Stelling,

Here is the text of proposed new claims for discussion in our interview in 10/574,267.

Mark Nuell #36,623

Proposed new claims for US 10/574,267

Claims to the elected species:

93. (new) A method for controlling microbes selected from the group consisting of protozoa, bacteria, fungi, viruses, and combinations thereof, said method comprising contacting the microbe with **at least one(?) crystalline** cupric silicate having a silica to copper ratio in the range of 1:0.34 to 1:5.15.

"at least one" supported at text bridging pp. 3-4

"crystalline" supported by X-ray diffraction results

94. (new) The method of claim 94, wherein the crystalline cupric silicate is immobilized. **E.g. page 60, lines 10-12.**

95. (new) The method of claim 93 wherein the cupric silicate is at least one selected from the group consisting of:

i) a cupric silicate having a silica to copper ratio of 1:5.15;

ii) a cupric silicate having a silica to copper ratio of 1:0.78;

iii) a cupric silicate having a silica to copper ratio of 1:0.53; and

iv) a cupric silicate having a silica to copper ratio of 1:0.34.

96. (new) The method of claim 94 wherein the cupric silicate is at least one selected from the group consisting of:

i) a cupric silicate having a silica to copper ratio of 1:5.15;

ii) a cupric silicate having a silica to copper ratio of 1:0.78;

iii) a cupric silicate having a silica to copper ratio of 1:0.53; and

iv) a cupric silicate having a silica to copper ratio of 1:0.34.

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97. (new) The method of claim 93 wherein

the cupric silicate i) exhibits the following characteristics: characteristic g values of electron spin resonance peaks being (a) 4.3; (b) 2.5; (c) 2.3; (d) 2.0 and (e) 2.0; and an X-ray diffraction pattern having 3 significant peaks at 16.2, 32.2 and 39.7 having peak heights of 2128, 1593 and 1470, respectively;

the cupric silicate ii) exhibits the following characteristics: characteristic g values of electron spin resonance peaks being (a) 2.2 and (b) 2.0; and an X-ray diffraction pattern having 3 significant peaks at 16, 32 and 39 having peak heights of 835, 706 and 502, respectively;

the cupric silicate iii) exhibits the following characteristics: characteristic g values of electron spin resonance peaks being (a) 2.1, (b) 2.0 and (c) 2.1; and an X-ray diffraction pattern having 3 significant peaks at 16.1, 32.2 and 39.71 having peak heights of 400, 394 and 330, respectively; and

the cupric silicate iv) exhibits the following characteristics: characteristic g values of electron spin resonance peaks being (a) 2.1, and (b) 2.0; and an X-ray diffraction pattern having 3 significant peaks at 16.2, 32.3 and 39.8 having peak heights of 541, 414 and 365, respectively.

98. (new) The method of claim 94 wherein

the cupric silicate i) exhibits the following characteristics: characteristic g values of electron spin resonance peaks being (a) 4.3; (b) 2.5; (c) 2.3; (d) 2.0 and (e) 2.0; and an X-ray diffraction pattern having 3 significant peaks at 16.2, 32.2 and 39.7 having peak heights of 2128, 1593 and 1470, respectively;

the cupric silicate ii) exhibits the following characteristics: characteristic g values of electron spin resonance peaks being (a) 2.2 and (b) 2.0; and an X-ray diffraction pattern having 3 significant peaks at 16, 32 and 39 having peak heights of 835, 706 and 502, respectively;

the cupric silicate iii) exhibits the following characteristics: characteristic g values of electron spin resonance peaks being (a) 2.1, (b) 2.0 and (c) 2.1; and an X-ray diffraction pattern having 3 significant peaks at 16.1, 32.2 and 39.71 having peak heights of 400, 394 and 330, respectively; and

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the cupric silicate iv) exhibits the following characteristics: characteristic g values of electron spin resonance peaks being (a) 2.1, and (b) 2.0; and an X-ray diffraction pattern having 3 significant peaks at 16.2, 32.3 and 39.8 having peak heights of 541, 414 and 365, respectively.

99. (new) The method of claim 93, wherein the bacteria is selected from the group consisting of coliform bacteria, Gram positive bacteria, Gram negative bacteria, or a combination thereof. = **69**

100. (new) The method of claim 93, wherein the protozoa is *Cryptosporidium parvum.* **= 70**

101. (new) The method of claim 93, wherein the fungus is a pathogenic fungus selected from the group consisting of *Sclerotium rolfsii, Rhizoctonia solani, Fusarium oxysporium, Pyricularia oryzae, Aspergillus sps,* or a combination thereof. **= 71**

102. (new) A method for controlling microbes selected from the group consisting of protozoa, bacteria, fungi, viruses, and combinations thereof, said method comprising contacting the microbe with **crystalline** cupric silicates having a silica to copper ratio of 1:1.

103. (new) The method of claim 102, wherein the crystalline cupric silicates are immobilized.

103. (new) The method of claim 102, wherein the cupric silicates exhibit the following characteristics: characteristic g values of electron spin resonance peaks being (a) 3.1; (b) 2.3; (c) 2.0; (d) 1.2 and (e) 0.9; and an X-ray diffraction pattern having 3 significant peaks at 16.1, 32.2 and 39.7 having peak heights of 940, 764 and 694, respectively.

104. (new) The method of claim 94, wherein the at least one cupric silicate is immobilized on an agropolymer, activated alumina, silica gel, cellulose, or resin-coated quartz sand.

Page 62, lines 26-33.

105. (new) The method of claim 102, wherein the at least one cupric silicate is immobilized on an agropolymer, activated alumina, silica gel, cellulose, or resin-coated quartz sand.

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Product by process claims:

106. (new) The method of claim 93, wherein the cupric silicate is produced by a method comprising:

i) adding a solution of a soluble copper salt to a solution of a soluble alkaline earth silicate to form a mixture, and optionally adding a mineral acid, to obtain a mixture having a pH below 6; **supported by "acidic" e.g. at p. 37, line 32, taken with "neutral reaction conditions (pH:6-7)" at p. 40, line 22**

ii) collecting the precipitate that forms; and

iii) washing the precipitate to obtain a **crystalline** cupric silicate having a silica to copper ratio in the range of 1:0.34 to 1:5.15. **supported by the synthesis examples, e.g. at p. 39, lines 30-32**

Generic claims:

107. (new) A method for controlling microbes selected from the group consisting of protozoa, bacteria, fungi, viruses, and combinations thereof, said method comprising contacting the microbe with at least one microbiocidal **crystalline** transition metal silicate selected from the group consisting of: (a) cupric silicates having a silica to copper ratio in the range of 1:0.34 to 1:5.15; (b) zinc silicates having a silica to zinc ratio in the range of 1:2 to 1:12; (c) silver silicates having a silica to silver ratio in the range of 1:15 to 1:19.5; (d) manganese silicates having a silica to manganese ratio in the range of 1:1 to 1:1.9; and (e) zirconium silicates having a silica to zirconium ratio in the range of 1:0.77 to 1:2.9.

108. (new) The method of claim 105, wherein the at least one crystalline transition metal silicate is immobilized.

109. (new) The method of claim 106, wherein the at least one transition metal silicate is immobilized on an agropolymer, activated alumina, silica gel, cellulose, or resin-coated quartz sand.

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110. (new) The method of claim 107, wherein the at least one transition metal silicate is immobilized on an agropolymer, activated alumina, silica gel, cellulose, or resin-coated quartz sand.